FORM PTO-1083

Docket No.: 588.1005
Date: May 11, 2005

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PATENT & TRADEMARK OFFICE

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COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

In re application of: **Wolfgang NIESSEN**
Serial No.: 10/733,486
Filed: December 11, 2003
For: **METHOD AND SYSTEM FOR CONTROLLING THE CREEP BEHAVIOR OF A VEHICLE EQUIPPED WITH AN AUTOMATED CLUTCH**

Sir:

Transmitted herewith is a **Appellant's Brief (13 pages)** in the above-identified application.

[ ] Small entity status under 37 C.F.R. 1.9 and 1.27 has been previously established.
[ ] Applicants assert small entity status under 37 C.F.R. 1.9 and 1.27.
[X] No fee for additional claims is required.
[ ] A filing fee for additional claims calculated as shown below, is required:

| | (Col. 1) | (Col. 2) | | | SMALL ENTITY RATE | SMALL ENTITY FEE | | LARGE ENTITY RATE | LARGE ENTITY FEE |
|---|---|---|---|---|---|---|---|---|---|
| FOR: | REMAINING AFTER AMENDMENT | | HIGHEST PREVIOUSLY PAID FOR | PRESENT EXTRA | | | OR | | |
| TOTAL CLAIMS | * | Minus | 20 = | 0 | x $ 25 | $ | | x $ 50 | $ |
| INDEP. CLAIMS | * | Minus | 3 = | 0 | x $100 | $ | | x $200 | $ |
| [ ] FIRST PRESENTATION OF MULTIPLE DEP. CLAIM | | | | | + $180 | $ | | + $360 | $ |
| | | | | | TOTAL: | $ | OR | TOTAL: | $ |

* If the entry in Co. 1 is less than the entry in Col. 2, write "0" in Col. 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.

[ ] Also transmitted herewith are:
[ ] Petition for extension under 37 C.F.R. 1.136
[ ] Other:

[X] Check(s) in the amount of **$500.00** is/are attached to cover:
[ ] Filing fee for additional claims under 37 C.F.R. 1.16
[ ] Petition fee for extension under 37 C.F.R. 1.136
[X] Other: **Fee for Appellant's Brief under 37 C.F.R. §41.20(b)(2)**

[X] The Assistant Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 50-0552.

[X] Any filing fee under 37 C.F.R. 1.16 for the presentation of additional claims which are not paid by check submitted herewith.
[X] Any patent application processing fees under 37 C.F.R. 1.17.
[X] Any petition fees for extension under 37 C.F.R. 1.136 which are not paid by check submitted herewith, and it is hereby requested that this be a petition for an automatic extension of time under 37 CFR 1.136.

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I hereby certify that the documents referred to as attached therein and/or fee are being deposited with the United States Postal Service as "first class mail" with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on May 11, 2005.
DAVIDSON, DAVIDSON & KAPPEL, LLC
BY: ______
Oliver Platz

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

| | | | | |
|---|---|---|---|---|
| Re: | Application of: | Wolfgang NIESSEN | | |
| | Serial No.: | 10/733,486 | Confirmation No.: | 7690 |
| | Filed: | December 11, 2003 | | |
| | For: | METHOD AND SYSTEM FOR CONTROLLING THE CREEP BEHAVIOR OF A VEHICLE EQUIPPED WITH AN AUTOMATED CLUTCH | | |
| | Art Unit: | 3683 | | |
| | Examiner: | Robert SICONOLFI | | |
| | Customer No.: | 23280 | | |
| | Atty. Docket: | 588.1005 | | |

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May 11, 2005

**APPELLANT'S BRIEF UNDER 37 C.F.R. § 41.37**

Sir:

Appellant submits this brief for the consideration of the Board of Patent Appeals and Interferences (the "Board") in support of his appeal of the Final Rejection dated November 17, 2004 in this application. The statutory fee of $500.00 is paid concurrently herewith.

1. REAL PARTY IN INTEREST

The real party in interest is LuK Lamellen und Kupplungsbau Beteiligungs KG, a German corporation having a place of business in Buehl, Germany, the assignee of the entire right, title and interest in the above-identified patent application. The

invention was assigned by inventor Niessen to LuK Lamellen und Kupplungsbau KG. The assignment was recorded on April 1, 2004 at reel 015158, frame 0148.

## 2. RELATED APPEALS AND INTERFERENCES

Appellant, his legal representatives, and assignee are not aware of any appeal, interference or judicial proceeding that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.

## 3. STATUS OF CLAIMS

Claims 1, 3 to 5 and 8 to 17 are pending. Claims 2, 6 and 7 have been canceled. Claims 1, 3 to 5 and 8 to 17 have been finally rejected as per the Final Office Action dated November 17, 2004.

The rejection to claims 1, 3 to 5 and 8 to 17 thus is appealed. A copy of appealed claims 1, 3 to 5 and 8 to 17 is attached hereto as Appendix A.

## 4. STATUS OF AMENDMENTS AFTER FINAL

No amendment was filed after the final rejection. A Notice of Appeal was filed on March 17, 2005.

## 5. SUMMARY OF THE INVENTION

The present invention provides for a method for controlling creep behavior of a vehicle equipped with an automated clutch (see, e.g. paragraphs [0002], [0014], 4 in Fig. 2), comprising the detection of actuation of a brake actuating element (see, e.g., paragraph [0022], 34 in Fig. 2), a creep parameter (see, e.g., paragraph [0027] and $KP_I$ in Fig. 1) influencing a creep of the vehicle (see, e.g., paragraph [0023], Fig. 1) and an actuating position of the automated clutch (see, e.g., 4 in Fig. 2) being a function of the creep parameter (see, e.g., paragraph [0027] and $KP_I$ in Fig. 1). The method controls the creep parameter (see, e.g., paragraph [0027] and $KP_I$ in Fig. 1) when the brake actuating element is increasingly actuated so that the creep is reduced (see, e.g. paragraph [0021], Fig. 1), the creep parameter being a speed of the vehicle (see, e.g.

paragraph [0024]).

Also disclosed is a system for controlling the creep behavior of a vehicle equipped with an automated clutch (see, e.g. paragraphs [0002], [0014], 4 in Fig. 2) comprising engine sensors (see, e.g. paragraph [0005], 18 and 20 in Fig. 2) for detecting operating parameters of a vehicle engine (see, e.g. paragraph [0005], 2 in Fig. 2); a brake sensor (see, e.g. paragraph [0022], 44 in Fig. 2) for detecting an operating state of a vehicle braking device (see, e.g. paragraph [0007], 35 in Fig. 2); a power adjustment actuator (see, e.g. 30 in Fig. 2, paragraph [0006]) for controlling a power output of the engine; a clutch actuator (see, e.g. paragraph [0009], 16 in Fig. 2) for controlling the clutch (see, e.g. paragraph [0009], 4 in Fig. 2) and a brake actuating element (see, e.g. paragraph [0007], 34 in Fig. 2). The system has an electronic control device (see, e.g. paragraph [0006], 14 in Fig. 2) having memory devices and a microprocessor (see, e.g. paragraph [0006], 29 in Fig. 2). The electronic control device (see, e.g. paragraph [0006], 14 in Fig. 2) is connected to the engine sensors, brake sensor (see, e.g. paragraph [0022], 44 in Fig. 2), clutch actuator (see, e.g. paragraph [0009], 16 in Fig. 2) and brake actuating element (see, e.g., Fig. 2) and controls the clutch actuator (see, e.g. paragraph [0009], 16 in Fig. 2) according to analysis of the brake sensor signals so as to control creep behavior according to the previously described method (see, e.g., paragraph [0027] and Fig. 1).

The present invention also discloses a system for controlling the creep behavior of a vehicle equipped with an automated clutch (see, e.g. paragraphs [0002], [0014], 4 in Fig. 2) comprising a brake actuating element (see, e.g. paragraph [0022], 34 in Fig. 2); a brake sensor (see, e.g. paragraph [0022], 44 in Fig. 2) sensing actuation of the brake actuating element; a clutch actuator (see, e.g. paragraph [0009], 16 in Fig. 2) for controlling the clutch (see, e.g. paragraph [0005], 4 in Fig. 2); a speed sensor (see, e.g., paragraph [0024]) detecting a rotational speed of a transmission input shaft downstream of the clutch (see, e.g. paragraphs [0002], [0014], 4 in Fig. 2); and an electronic control device (see, e.g. paragraph [0006], 14 in Fig. 2) having memory devices and a microprocessor (see, e.g. paragraph [0006], 29

in Fig. 2), the electronic control device (see, e.g. paragraph [0006], 14 in Fig. 2) connected to the brake sensor (see, e.g. paragraph [0022], 44 in Fig. 2) and clutch actuator (see, e.g. paragraph [0009], 16 in Fig. 2), the control device receiving an input from the speed sensor and reducing vehicle creep as the brake actuating element is increasingly actuated (see, e.g., paragraph [0027] and Fig. 1).

The present invention also discloses a method for controlling creep behavior of a vehicle equipped with an automated clutch(see, e.g. paragraphs [0002], [0014], 4 in Fig. 2), comprising detecting actuation of a brake actuating element (see, e.g. paragraph [0027] to [0029]); and controlling the automated clutch to attain a vehicle speed setpoint (see, e.g. paragraph [0027], KPs in Fig. 1), the vehicle speed setpoint being reduced as the brake actuating element is increasingly actuated (see, e.g. paragraph [0027], Fig. 1).

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1, 3 to 5 and 8 to 17 should be rejected under 35 U.S.C. § 103(a) as being unpatentable over Kosik et al. (U.S. Patent No. 5,700,227) in view of Slicker et al. (U.S. Patent No. 5,314,050).

7. ARGUMENTS

**Rejection under 35 U.S.C. §103(a)**

The issue presented is whether claims 1, 3 to 5 and 8 to 17 should be rejected under 35 U.S.C. § 103(a) as being unpatentable over Kosik et al. (U.S. Patent No. 5,700,227) in view of Slicker et al. (U.S. Patent No. 5,314,050).

**Claims 1, 3 to 5 and 8 to 15**

Kosik shows an automatic clutch control where automatic clutch is controlled so that the drive torque is reduced linearly as a brake pedal is actuated. A vehicle speed is monitored by sensor 11 to determine if a very low speed is present (See Col. 4, line 7 to 10).

Slicker discloses in a so-called "creep mode" controlling an input speed as a

function of the engine speed and throttle position, when the "pedal signal is above a certain threshold." See col. 6, lines 14 to 27. The pedal signal is the accelerator pedal signal. The input speed is controlled to a creep speed which is a percentage of the engine speed, the percentage being increased as the accelerator pedal position increases. As with any automobile, Slicker thus teaches controlling input speed as a function of the accelerator pedal position.

Claim 1 recites "controlling the creep parameter when the brake actuating element is increasingly actuated so that the creep is reduced, the creep parameter being a speed of the vehicle."

The present application also states at [0011]: "[o]ne important function which is made possible by the automated clutch is the vehicle creep, which makes it possible for the vehicle to move slowly...without actuating the accelerator pedal."

From the present specification and claims, it is clear that a creep mode is one in which the vehicle moves forward while the accelerator pedal is not actuated. This is well known for example in cars with automatic transmissions, where the car moves if the foot is not on the brake even if the accelerator pedal is not actuated. Moreover, it is clear that the accelerator pedal is not actuated since the present invention concerns how to control the creep mode when the brake actuating element is actuated. If the brake pedal is being actuated the accelerator pedal is not.

Slicker thus does not describe "a creep parameter" at all, as creep parameter is defined by the present invention, since the mode described by Slicker is a low speed acceleration mode where the accelerator pedal is depressed between 3% and 25% (See col. 6, line 14 to 17). Even if somehow this were a creep mode as per the present invention, there is no reason or motivation to combine Kosik and Slicker: Slicker in its creep mode deals with how to control the acceleration when the accelerator is depressed, and Kosik deals with brake actuation.

These two actuations would be understood by one of skill in the art to be mutually exclusive, as a driver typically would not actuate both a brake pedal and an accelerator pedal at the same time.

Thus it is respectfully submitted that one of skill in the art would not have used any speed teachings of Slicker with the Kosik brake-related device.

In addition, even if somehow the two disclosures however could have been combined (and it is respectfully submitted that they could not have been), a fair reading of Slicker indicates that Slicker would have taught one of skill in the art to modify the functioning of the accelerator pedal actuation of Kosik to reduce the accelerator pedal impact, not to alter brake pedal impact as per claim 1.

Withdrawal of the rejection to claim 1, as well as to claim 11 which recites relevant structural limitations, and their dependent claims, is respectfully requested.

**Claim 11: Argued separately**

Independent claim 11 recites a system for controlling the creep behavior of a vehicle equipped with an automated clutch, the system comprising:

a brake actuating element;

a brake sensor sensing actuation of the brake actuating element;

a clutch actuator for controlling the clutch;

a speed sensor detecting a rotational speed of a transmission input shaft downstream of the clutch; and

an electronic control device having memory devices and a microprocessor, the electronic control device connected to the brake sensor and clutch actuator, the control device receiving an input from the speed sensor and reducing vehicle creep as the brake actuating element is increasingly actuated.

In addition to the arguments above regarding combining Slicker and Kosik, there is absolutely no teaching or disclosure in Slicker to provide Kosik with "a speed sensor detecting a rotational speed of a transmission input shaft

downstream of the clutch" as claimed.

Withdrawal of the rejection with respect to claim 11 for this reason as well is respectfully requested.

**Claim 12: Argued separately**

With further respect to claim 12, claim 12 recites the method as recited in claim 1 wherein the speed of the vehicle is controlled so as to vary linearly with actuation of the brake element. Neither Kosik nor Slicker discloses this limitation, and withdrawal for this reason as well is respectfully requested.

The drive torque M0 and vehicle speed in Kosik (or any vehicle) clearly are not directly related as asserted in the Advisory Action. As a simple example of this, the vehicle could be rolling downhill with the engine off and no drive torque being provided. In any event, drive torque and vehicle speed do not have a linear relationship (torque being expressed in ft-lbs). For example, if the speed of a vehicle decreases by half, the torque typically will decrease by less than half. See http://www.allpar.com/eek/hp-vs-torque.html for example.

Withdrawal of the rejection to claim 12 for this reason as well is respectfully requested.

**Claim 13: Argued separately**

With further respect to claim 13, claim 13 recites the method as recited in claim 1 wherein the speed of the vehicle is controlled so that the speed of the vehicle equals (BMAX-B/BMAX)*VMAX for B<BMAX and zero for B>BMAX, where B is the brake actuation, BMAX is a maximum creep brake actuation, and VMAX is the maximum vehicle creep when the brake is not actuated. Neither Kosik nor Slicker discloses this limitation, and withdrawal for this reason as well is respectfully requested. Neither the Office Action not the advisory action addressed this limitation.

**Claim 14: Argued separately**

With further respect to claim 14, claim 14 recites the method as recited in

claim 14 wherein the speed of the vehicle is determined using the transmission ratio. Neither Kosik nor Slicker discloses this limitation and Slicker clearly does not use a transmission ratio. Withdrawal of the rejection to claim 14 for this reason as well is respectfully requested.

**Claims 16 and 17: Argued separately**

Independent claim 16 recites a method for controlling creep behavior of a vehicle equipped with an automated clutch, comprising:

> detecting actuation of a brake actuating element; and
>
> controlling the automated clutch to attain a vehicle speed setpoint, the vehicle speed setpoint being reduced as the brake actuating element is increasingly actuated.

Neither Kosik nor Slicker discloses controlling an automated clutch to attain a vehicle speed setpoint which is reduced as the brake actuating element is increasingly actuated. Moreover, no such vehicle speed setpoint is present in Kosik at all and Slicker provides no motivation to provide one. Withdrawal of the rejection to claim 16 and dependent claim 17 thus is respectfully requested.

Withdrawal of the 35 U.S.C. §103(a) rejections to claims 1, 3 to 5 and 8 to 17 is respectfully requested.

Respectfully submitted,

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By: ______________________

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**APPENDIX A:**

PENDING CLAIMS 1, 3 TO 5 AND 8 TO 17 OF
U.S. APPLICATION SERIAL NO. 10/733,486

Claim 1 (previously presented): A method for controlling creep behavior of a vehicle equipped with an automated clutch, comprising:

detecting actuation of a brake actuating element, a creep parameter influencing a creep of the vehicle, an actuating position of the automated clutch being a function of the creep parameter; and

controlling the creep parameter when the brake actuating element is increasingly actuated so that the creep is reduced, the creep parameter being a speed of the vehicle.

Claim 2 (canceled).

Claim 3 (original): The method as recited in claim 1 wherein the detecting step includes detecting an actuation force on the brake pedal.

Claim 4 (original): The method as recited in claim 1 wherein the detecting step includes detecting a pressure in a brake system.

Claim 5 (original): The method as recited in claim 1 wherein the detecting step includes detecting a path of the brake actuating element.

Claims 6 and 7 (canceled).

Claim 8 (original): A system for controlling the creep behavior of a vehicle

equipped with an automated clutch, the system comprising:

engine sensors for detecting operating parameters of a vehicle engine;

a brake sensor for detecting an operating state of a vehicle braking device;

a power adjustment actuator for controlling a power output of the engine;

a clutch actuator for controlling the clutch;

a brake actuating element; and

an electronic control device having memory devices and a microprocessor, the electronic control device connected to the engine sensors, brake sensor, clutch actuator and brake actuating element, the control device controlling the clutch actuator according to analysis of the brake sensor signals so as to control creep behavior according to the method as recited in claim 1.

Claim 9 (original): The system as recited in claim 8 wherein the engine sensors includes a first sensor for detecting a vehicle speed.

Claim 10 (original): The system as recited in claim 9 wherein the first sensor detects a rotational speed of an input shaft of a transmission situated downstream from the clutch in order to detect the vehicle speed.

Claim 11 (previously presented): A system for controlling the creep behavior of a vehicle equipped with an automated clutch, the system comprising:

a brake actuating element;

a brake sensor sensing actuation of the brake actuating element;

a clutch actuator for controlling the clutch;

a speed sensor detecting a rotational speed of a transmission input shaft downstream of the clutch; and

an electronic control device having memory devices and a microprocessor, the electronic control device connected to the brake sensor and clutch actuator, the control device receiving an input from the speed sensor and reducing vehicle creep as the brake actuating element is increasingly actuated.

Claim 12 (previously presented): The method as recited in claim 1 wherein the speed of the vehicle is controlled so as to vary linearly with actuation of the brake element.

Claim 13 (previously presented): The method as recited in claim 1 wherein the speed of the vehicle is controlled so that the speed of the vehicle equals (BMAX-B/BMAX)*VMAX for B<BMAX and zero for B>BMAX, where B is the brake actuation, BMAX is a maximum creep brake actuation, and VMAX is the maximum vehicle creep when the brake is not actuated.

Claim 14 (previously presented): The method as recited in claim 1 wherein the speed of the vehicle is determined using a sensor sensing a rotational speed of an input shaft to a transmission, the sensor being downstream of the clutch.

Claim 15 (previously presented): The method as recited in claim 14 wherein the speed

of the vehicle is determined using the transmission ratio.

Claim 16 (previously presented): A method for controlling creep behavior of a vehicle equipped with an automated clutch, comprising:

detecting actuation of a brake actuating element; and

controlling the automated clutch to attain a vehicle speed setpoint, the vehicle speed setpoint being reduced as the brake actuating element is increasingly actuated.

Claim 17 (previously presented): The method as recited in claim 16 further comprising determining a vehicle speed as a function of an input shaft to a transmission.